

SECTION III—REMARKS

This amendment is submitted in response to the Office Action mailed March 8, 2006. Claims 1, 9 and 17 are amended, and claims 1-24 remain pending in the application. Applicant respectfully requests reconsideration of the application and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1-3, 6-7, 17-19 and 22-23 as anticipated under 35 U.S.C. § 102(b) by European Patent Application Publication No. EP 1 217 734 A2 to Bradley *et al.* (“Bradley”). Applicant respectfully traverses the Examiner’s rejections.

A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). As explained below, *Bradley* cannot anticipate these claims because it does not disclose every element and limitation recited therein.

Claim 1, as amended, recites an apparatus combination including a film bulk acoustic resonator (FBAR) comprising a piezoelectric membrane having a portion thereof sandwiched between a first electrode and a second electrode, the piezoelectric membrane being suspended from at least two edges thereof, and a heat transfer layer placed on “at least part of the suspended portion of the piezoelectric membrane substantially surrounding, but not in electrical contact with,” the first electrode. *Bradley* does not disclose a combination including these limitations. *Bradley* discloses a bulk acoustic resonator perimeter reflection system that includes an FBAR 50 formed on the surface of

a substrate and part of which is suspended above a depression 56 in the substrate. The system also includes a structure 76 consisting of three segments 78a, 78b and 78c positioned along three sides of the FBAR.

The Examiner argues that structure 76 of *Bradley* is equivalent to the heat transfer layer recited in the claim. Applicant respectfully disagrees. *Bradley* does not disclose, teach or suggest that structure 76 can or is used for heat transfer, but even if structure 76 was a heat transfer layer *Bradley* would not anticipate the claim because structure 76 is formed well away from the suspended part of FBAR 50—that is, the part of FBAR 50 that is above depression 56. *Bradley* therefore does not disclose, teach or suggest a combination including a heat transfer layer placed on “at least part of the suspended portion of the piezoelectric membrane substantially surrounding, but not in electrical contact with,” the first electrode. Applicant submits that *Bradley* therefore cannot anticipate claim 1 and respectfully requests withdrawal of the rejection and allowance of the claim.

Regarding claims 2-3 and 6-7, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See generally* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 1 is in condition for allowance. Applicant respectfully submits that claims 2-3 and 6-7 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited in these claims. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Claim 17, as amended, recites a system combination including an FBAR coupled to the signal source, the FBAR comprising a piezoelectric membrane having a portion

thereof sandwiched between a first electrode and a second electrode, the piezoelectric membrane being suspended from at least two edges thereof, and a heat transfer layer placed on “at least part of the suspended portion of the piezoelectric membrane substantially surrounding, but not in electrical contact with,” the first electrode. By analogy to the discussion above for claim 1, *Bradley* cannot anticipate the claim because it does not disclose, teach or suggest every element and limitation of the claim. Applicant submits that claim 17 is therefore allowable and respectfully requests withdrawal of the rejection.

Regarding claims 18-19 and 22-23, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See generally* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 17 is in condition for allowance. Applicant respectfully submits that claims 18-19 and 22-23 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited in these claims. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 4-5, 8, 9-16, 20-21 and 24 under 35 U.S.C § 103(a) as obvious in view of, and therefore unpatentable over, *Bradley* alone or in view of Applicant’s allegedly admitted prior art.

As to claims 4-5, 8, 20-21 and 24, Applicant respectfully traverses the Examiner’s rejection. If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, independent claims 1 and 17 are in condition for

allowance. Applicant respectfully submits that claims 4-5, 8, 20-21 and 24 are therefore allowable by virtue of their dependence on allowable independent claims, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

As to claims 9-16, Applicant respectfully traverses the Examiner's rejections. To establish a *prima facie* case of obviousness, the Examiner must establish that three criteria are met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. For at least the reasons explained below, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness.

Claim 9, as amended, recites an apparatus combination including a plurality of coupled film bulk acoustic resonators (FBARs) on a piezoelectric membrane suspended from at least two edges, and a heat transfer layer placed "on at least part of the suspended portion of the piezoelectric membrane substantially surrounding, but not in electrical contact with," the plurality of first electrodes. The Examiner alleges that *Bradley* discloses the claimed invention, except for a plurality of coupled FBARs on the piezoelectric membrane. To make up for *Bradley*'s disclosure deficiency, the Examiner relies on Applicant's allegedly admitted prior art, which allegedly discloses a plurality of coupled FBARs on a piezoelectric membrane. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine *Bradley* with Applicant's allegedly admitted prior art because the courts have

held that mere duplication of essential working parts of essential working parts of a device involves only routine skill in the art.

Applicant respectfully disagrees. By analogy to the discussion above for claims 1 and 17, *Bradley* does not disclose, teach or suggest a combination including a heat transfer layer placed “on at least part of the suspended portion of the piezoelectric membrane substantially surrounding, but not in electrical contact with,” the plurality of first electrodes. Therefore, even if *Bradley* were combined with Applicant’s allegedly admitted prior art, the combination would not result in a combination including all of the recited elements and limitations. Applicant submits that claim 9 is therefore allowable and respectfully requests withdrawal of the rejection.

Regarding claims 10-16, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 9 is in condition for allowance. Applicant respectfully submits that claims 10-16 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Conclusion

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via


telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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